

# BIOLOGY NMDCAT EARLIER PREP

## PMC UNIT WISE TEST Unit-10

### TOPIC:

- ✓ Biotechnology

**Q.1 Genetic engineering means:**

- A. Gene manipulation
- B. Utilization of microbes in industries
- C. Tissue culture
- D. Somatic hybridization

**Q.2 Which of the following produces multiple copies of a gene for basic research or for large scale production of valuable products for humans?**

- A. Restriction enzymes
- B. Gene cloning
- C. DNA fingerprinting
- D. Gel electrophoresis

**Q.3 What is the most logical sequence for splicing and insertion of recombinant DNA in bacteria?**

- I. Transform bacteria
- II. Cut the plasmid DNA
- III. Extract plasmid DNA
- IV. Hydrogen-bond the plasmid to DNA fragments
- V. Use ligase to seal plasmid DNA to fragment DNA

- A. I, II, IV, III, V
- B. II, III, V, IV, I
- C. III, II, IV, V, I
- D. III, IV, V, I, II

**Q.4 During reverse transcription, \_\_\_\_\_ is assembled on \_\_\_\_\_.**

- A. mRNA; DNA
- B. DNA; enzymes
- C. cDNA; mRNA
- D. DNA; agar

**Q.5 It is an example of commonly used restriction enzyme in Biotechnology:**

- A. pSC 101
- B. EcoR1
- C. pBR 322
- D. Phage DNA

**Q.6 How many restriction enzymes are frequently used during genetic engineering?**

- A. 20
- B. 60
- C. 400
- D. 200

**Q.7 Which of the following statements does not hold true for restriction enzyme?**

- A. It recognizes a palindromic nucleotide sequence
- B. It is isolated from viruses
- C. It is an endonuclease
- D. It produces the same kind of sticky ends in different DNA molecules

**Q.8 Specific sequence of four or six nucleotides arranged symmetrically in reverse order where restriction enzymes works is called:**

- A. Okazaki fragments
- B. Cohesive ends
- C. Palindromic sequences
- D. Blunt ends

**Q.9 Restriction endonucleases do not cut bacterial DNA because:**

- A. It is circular
- B. It is methylated
- C. It is specific
- D. Palindromic sequences are not present

**Q.10 Bacteriophages are used in biotechnology as:**

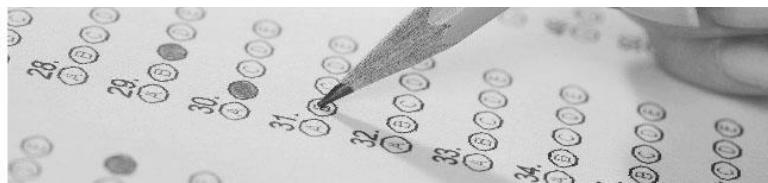
- A. Vector or vehicle DNA
- B. Restriction enzyme synthesizers
- C. Cloning organism
- D. Molecular scissors

**Q.11 Which of the following tool of recombinant DNA technology is incorrectly paired with its use?**

- A. Restriction enzyme – production of RFLPs
- B. DNA polymerase – PCR
- C. DNA ligase – cuts DNA to creates sticky ends
- D. Reverse transcriptase – cDNA synthesis



- Q.12 Engineered bacteria are reproduced by inserting:**
- A. Plasmids DNA
  - B. Vehicle DNA
  - C. Desired gene loaded on vector DNA
  - D. Phage DNA
- Q.13 Which of the following structure is protein in nature?**
- A. pBR 322
  - B. EcoR1
  - C. pSC 101
  - D. Palindromic sequences
- Q.14 Which of the following plasmid have antibiotic resistant gene/s for both tetracycline and ampicillin?**
- A. pBR322
  - B. EcoR1
  - C. pSC 101
  - D. pBR 320
- Q.15 Permeability of bacterial cells can be increased by treating them with:**
- A. Sodium chloride
  - B. Silicon carbide
  - C. Calcium chloride
  - D. Cesium chloride
- Q.16 Bacterial virus use in recombinant DNA technology as molecular carrier:**
- A. Plasmid
  - B. T2 Bacteriophage
  - C. Lambda phage
  - D. T4 Bacteriophage
- Q.17 Collection of bacterial or bacteriophage clones is called:**
- A. Gene pole
  - B. Genomic library
  - C. Genome
  - D. Karyotype
- Q.18 The DNA fragments making up a genomic library are generally contained in:**
- A. Recombinant plasmids of bacteria
  - B. Recombinant viral RNA
  - C. Individual wells
  - D. DNA-RNA hybrids
- Q.19 Which is not a vector for rDNA technology?**
- A. Plasmids
  - B. Phages
  - C. Cosmids
  - D. Mosquitoes
- Q.20 Electrophoresis and Southern blotting techniques are used in**
- A. DNA fingerprinting
  - B. Gene cloning
  - C. Gene synthesis
  - D. Gene therapy
- Q.21 Plasmids are suitable vector for gene cloning because they:**
- A. Are smaller circular DNA
  - B. Can shuttle between prokaryotes and eukaryotes
  - C. Are linear DNA
  - D. Have large molecular weight
- Q.22 Bacteria possessing restriction endonuclease enzymes remain:**
- A. Affected by bacteriophages
  - B. Resistant to drugs and heat
  - C. Unattacked by bacteriophages
  - D. Susceptible to bacteriophages
- Q.23 In the PCR method, the DNA segment is replicated over a million times. This repeated replication is catalyzed by the enzyme**
- A. DNA polymerase
  - B. DNA dependent RNA polymerase
  - C. Taq polymerase
  - D. Primase
- Q.24 Which statement is not true about PCR?**
- A. Developed by Kary Mullis
  - B. Is not very specific
  - C. Take its name from DNA polymerase
  - D. Taq polymerase is used
- Q.25 It is the natural habitat of *Thermus aquaticus*:**
- A. Glaciers
  - B. Deep sea waters
  - C. Rocky mountains
  - D. Hot springs
- Q.26 During PCR, primer always attaches to \_\_\_\_\_ end of target gene.**
- A. 5'
  - B. 3'
  - C. 2'
  - D. 1'
- Q.27 Which one of the following is not related to PCR?**
- A. Amplification of DNA
  - B. *In vitro* method
  - C. Use to obtain protein
  - D. Quick method



- Q.28 Which of the following technique can be used to increase the amount of fossils DNA for testing?**
- A. RFLP analysis
  - B. PCR
  - C. Electroporation
  - D. Gel electrophoresis
- Q.29 In genetic engineering, the antibiotics are used as/to:**
- A. Select healthy vectors
  - B. Keep the cultures free of infection
  - C. Sequences from where replication starts
  - D. Selectable markers
- Q.30 Which of the following procedures would produce RFLPs?**
- A. Incubating a mixture of single-stranded DNA
  - B. Incubating DNA with restriction enzymes
  - C. Incubating DNA nucleotides with DNA polymerase
  - D. Incubating RNA with DNA nucleotides and reverse transcriptase
- Q.31 Transfer of rDNA through phage is done by:**
- A. Diffusion
  - B. Transduction
  - C. Transformation
  - D. Conjugation
- Q.32 DNA or RNA segment tagged with a radioactive molecules is called**
- A. Vector
  - B. Clone
  - C. Probe
  - D. Plasmid
- Q.33 DNA finger printing cannot apply on:**
- A. Sperm cell
  - B. Skin cell
  - C. RBCs
  - D. Hepatic cell
- Q.34 Gene therapy is the insertion of genetic material in the human cell for:**
- A. Treatment of diseases
  - B. Disease resistance
  - C. New traits
  - D. Recombination of genes
- Q.35 When bone marrow stem cells are removed from the blood and infected with a retrovirus that carries a normal gene, this is an example of:**
- A. PCR
  - B. Chemotherapy
  - C. Viral disinfection
  - D. Ex-vivo gene therapy
- Q.36 Cystic fibrosis patients lack a gene for transmembrane carrier of:**
- A. Chloride ions
  - B. Potassium ions
  - C. Sodium ions
  - D. Phosphorous ions
- Q.37 Permanent cure for ADA deficiency is:**
- A. Genetically engineered lymphocyte
  - B. Enzyme replacement therapy
  - C. Bone marrow transplantation
  - D. ADA gene introduced in early embryonic stages
- Q.38 A functional ADA cDNA can be introduced into cells of the patients receiving gene therapy by using vector constituted by**
- A. *E. coli*
  - B. Retrovirus
  - C. Reovirus
  - D. *Agrobacterium*
- Q.39 In hypercholesterolemia, patients lack a receptor for removing cholesterol from:**
- A. Lymph
  - B. Glomerular filtrate
  - C. Blood
  - D. Blood cells
- Q.40 The protein expressed by gene in coronary artery angioplasty:**
- A. Vascular endothelial growth inhibitor
  - B. Vascular epithelial growth factor
  - C. Vascular endothelial growth promoter
  - D. Vascular endothelial growth factor
- Q.41 The role of gene of VEGF in coronary artery angioplasty is \_\_\_\_\_.**
- A. Angiogenesis
  - B. Proliferation of blood cells
  - C. Proliferation of epithelial cells of heart
  - D. Growth of blood cells



- Q.42** Organoids containing gene for clotting factor are mostly used for gene therapy of:
- A. Haemophilia
  - B. Parkinson disease
  - C. Cystic fibrosis
  - D. SCID
- Q.43** Dideoxyribonucleoside triphosphates are used to terminate DNA synthesis at different site. Which method involves this procedure?
- A. Sanger's method
  - B. K. Mullis's method
  - C. Maxam-Gilbert's method
  - D. Gottlieb's method
- Q.44** DNA fragments generated by the restriction endonucleases in a chemical reaction can be separated by
- A. Centrifugation
  - B. Electrophoresis
  - C. Blotting
  - D. Restriction mapping
- Q.45** Antibody used to treat genital herpes obtain from:
- A. Corn
  - B. Sugarcane
  - C. Soyabean
  - D. Wheat
- Q.46** Which one of the following biotechnology product is used in heart patients?
- A. Tissue plasminogen activator
  - B. Hemophilia factor IX
  - C. Bovine growth hormone
  - D. Lovastatin
- Q.47** Chemical nature of biodegradable plastic is:
- A. Diphydroxy butyrate
  - B. Diphydroxy propionate
  - C. Polyhydroxy butyrate
  - D. Dihydroxyacetone
- Q.48** Which of the following is mostly used to develop transgenic animals?
- A. Sanger's method
  - B. Particle gun method
  - C. Vortex method
  - D. Microinjection method
- Q.49** Anti-thrombin III is currently being produced by a herd of:
- A. Cats
  - B. Goats
  - C. Dogs
  - D. Cows
- Q.50** During formation of transgenic plant, electric current used to make tiny holes in \_\_\_\_\_ that facilitates the entrance of genetic material.
- A. Nuclear membrane
  - B. Cell wall
  - C. Plasma membrane
  - D. Mitochondrial membrane

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Test Code 10

Subject Bio 10 Test Syllabus CT5-10  
Key

1	A	21	A	41	A
2	B	22	C	42	A
3	C	23	C	43	A
4	C	24	B	44	B
5	B	25	D	45	C
6	A	26	B	46	A
7	A	27	C	47	C
8	B	28	B	48	D
9	B	29	D	49	B
10	A	30	B	50	E
11	C	31	B	51	
12	C	32	C	52	
13	C	33	C	53	
14	A	34	A	54	
15	C	35	D	55	
16	C	36	A	56	
17	B	37	D	57	
18	A	38	B	58	
19	D	39	C	59	
20	A	40	D	60	